1. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-7 + 6x > 7x \text{ or } -7 + 8x < 10x$$

A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-9.75, -3.75]$ and $b \in [-4.5, -2.25]$

B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-8.25, -5.25]$ and $b \in [-6, 1.5]$

C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-0.75, 5.25]$ and $b \in [4.5, 7.5]$

D. $(-\infty, a) \cup (b, \infty)$, where $a \in [0.75, 6.75]$ and $b \in [3.75, 8.25]$

E. $(-\infty, \infty)$

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2. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{3}{9} + \frac{3}{5}x \geq \frac{6}{6}x - \frac{8}{4}$$

A. $(-\infty, a]$, where $a \in [-9.75, -3.75]$

B. $(-\infty, a]$, where $a \in [5.25, 8.25]$

C. $[a, \infty)$, where $a \in [4.5, 6.75]$

D. $[a, \infty)$, where $a \in [-7.5, -4.5]$

E. None of the above.

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3. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{3}{7} - \frac{5}{4}x < \frac{9}{8}x - \frac{10}{2}$$

A. (a, ∞), where $a \in [-5.25, -1.5]$

B. (a, ∞), where $a \in [0, 5.25]$

C. $(-\infty, a)$, where $a \in [-2.25, 5.25]$

D. $(-\infty, a)$, where $a \in [-3.75, 0.75]$

E. None of the above.

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4. Using an interval or intervals, describe all the x-values within or including a distance of the given values.

More than 7 units from the number 9.

A. $(2, 16)$

B. $(-\infty, 2) \cup (16, \infty)$

C. $[2, 16]$

D. $(-\infty, 2] \cup [16, \infty)$

E. None of the above

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5. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-6 - 9x \leq \frac{-36x - 7}{8} < 7 - 5x$$

A. $(a, b]$, where $a \in [-1.72, -0.9]$ and $b \in [13.5, 18]$

B. $[a, b)$, where $a \in [-4.12, 0.53]$ and $b \in [13.5, 20.25]$

C. $(-\infty, a) \cup [b, \infty)$, where $a \in [-2.62, -0.22]$ and $b \in [14.25, 21]$

D. $(-\infty, a] \cup (b, \infty)$, where $a \in [-3.38, 0]$ and $b \in [13.5, 19.5]$

E. None of the above.

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6. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-6x + 7 > -4x - 3$$

A. $(-\infty, a)$, where $a \in [-7, 1]$

B. (a, ∞), where $a \in [-6, -1]$

C. (a, ∞), where $a \in [4, 8]$

D. $(-\infty, a)$, where $a \in [1, 10]$

E. None of the above.

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7. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-5 + 5x > 7x \text{ or } -4 + 7x < 10x$$

A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-5.25, -1.5]$ and $b \in [-6.75, 0.75]$

B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-3.97, -0.67]$ and $b \in [-3.75, -0.75]$

C. $(-\infty, a) \cup (b, \infty)$, where $a \in [1.05, 3]$ and $b \in [1.5, 3]$

D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-0.75, 9]$ and $b \in [0.75, 3.75]$

E. $(-\infty, \infty)$

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8. Using an interval or intervals, describe all the x-values within or including a distance of the given values.

No less than 8 units from the number 4.

A. $(-\infty, -4] \cup [12, \infty)$

B. $(-\infty, -4) \cup (12, \infty)$

C. $[-4, 12]$

D. $(-4, 12)$

E. None of the above

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9. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-8 - 7x < \frac{-42x + 8}{9} \leq 5 - 5x$$

A. $[a, b)$, where $a \in [-6.75, 2.25]$ and $b \in [9, 13.5]$

B. $(-\infty, a] \cup (b, \infty)$, where $a \in [-9.75, 0]$ and $b \in [12, 17.25]$

C. $(a, b]$, where $a \in [-6, 0]$ and $b \in [10.5, 14.25]$

D. $(-\infty, a) \cup [b, \infty)$, where $a \in [-5.25, -3]$ and $b \in [10.5, 15]$

E. None of the above.

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10. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$5x + 10 < 10x + 7$$

A. $(-\infty, a)$, where $a \in [-0.83, -0.34]$

B. (a, ∞), where $a \in [-2.1, -0.1]$

C. $(-\infty, a)$, where $a \in [-0.35, 2.13]$

D. (a, ∞), where $a \in [-0.4, 4.9]$

E. None of the above.
